PEDIATRICS

UNDER THE CHARGE OF

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The Serodiagnosis of Anterior Poliomyelitis.—EDWARD MILLER (*Deut. med. Woch.*, 1911, xxxvii, 1105) points out that the clinical interest in the experimental immunization of apes to anterior poliomyelitis by a serum lies in the fact that this indicates the presence of antibodies in human beings who have recovered from anterior poliomyelitis, and that it makes possible a serodiagnosis of epidemic anterior poliomyelitis. The latter would be of great value, especially in the abortive form of the disease. Müller and Römer have made investigations which have convinced them that these antibodies develop also in human beings in conjunction with epidemic anterior poliomyelitis and remain in the blood for many years. Active virus from apes was mixed with the serum of an immunized human being for many hours and then injected intracerebrally in apes. Controls received in the same way virus mixed with serum from individuals who never had anterior poliomyelitis. The controls contracted the disease, while the test cases escaped, presumably because of the antibodies present in the immunizing serum. Miller examined a typical case of abortive anterior poliomyelitis. The clinical diagnosis of this form rests on the fact that in an epidemic several children in one family show identical prodromal symptoms; but one of them fails to develop the paralysis which attacks the others. Using the serum from this case in the test stated above, he found the serodiagnosis positive, thereby substantiating the clinical diagnosis and proving that this form of anterior poliomyelitis does exist. This coincides with the results obtained by Anderson Frost, who found in an epidemic 9 cases which had suspicious prodromal symptoms; but which developed no paralysis. They neutralized an emulsion of active virus six times with the blood serum of these cases. It is still a question whether the predisposition to the disease found in children is that of the spinal cord or the portal of entry. The liability of the lymphatic system to disease in children, and the hypothesis that the virus is carried to the spinal cord through the lymphatics favor the former idea, while the latter possibility has been rather neglected. Just as a positive reaction in this serodiagnosis indicates an abortive case of anterior poliomyelitis, so does a negative reaction absolutely indicate the absence of poliomyelitis infection. This fact Müller demonstrated in another series of experiments. In proof that there is no etiological difference in the sporadic and epidemic forms of the disease, Müller reports that the serum from a case which had the sporadic form six years before neutralized the virus of the epidemic form exactly the same as did the serum of the epidemic form. This serodiagnosis may well prove to be highly important in tracing the origin of widely separated local epidemics. Owing to the expense, the difficult technique, the length of time necessary, and the possibility of errors due to using unrecognized abortive cases for controls, this method of serodiagnosis is rather applicable to the development of research work than to general practice and isolated cases. The clinical value of the method, however, is greater in children than in adults. The method would seem most valuable in recognizing sporadic cases disguised as Landry's paralysis or acute bulbar paralysis of childhood. The antibodies which have been demonstrated as early as the sixth week after infection, exist and may be found for years afterward, and this method of serodiagnosis will become of paramount importance to the pathological and histological methods of diagnosis. The therapeutic value of an antiserum in this disease has so far proved negative.

The Treatment of Early Infantile Paralysis by Immobilization.—E. MAYER (*Deut. med. Woch.*, 1911, xxxvii, 1107) adds an important feature to the local treatment of the paralyzed parts in anterior poliomyelitis by describing MacKenzie's method of immobilization. Up to the present time the usual treatment of this disease has been rest in bed, hydrotherapy to combat fever, and pain and, locally, inunctions of mercury. Krause, believing the gastro-intestinal tract to be the avenue of infection, recommends calomel to disinfect the intestines. After the acute stage has passed, the paralyzed parts are usually massaged, treated by electricity, and eventually placed in splints. While some cases are cured by this treatment, yet the greater percentage are uninfluenced by it, and subsequently exhibit the most pitiful contractures and paralyses. The contractures arise from the recovery of one set of muscles without the recovery of the opposing muscle group; from long continued crooked positions of the patient in bed, or from the pressure of the bed clothing. The development of a pes equinus, for instance, can often be avoided if the foot is protected from the weight of the bedclothing. In the light of the relatively poor results from the routine treatment, the proposition of MacKenzie is highly interesting. He recommends, where paralysis occurs in the upper extremity, that the muscles, immediately on being affected, be placed at rest by splints and kept so for weeks or months. Also that the position be such as to relieve the muscle of any functional movement. By absolute rest in bed, the position and angle of the splint is gradually changed. In 10 patients coming under observation during the first ten days, MacKenzie reports 9 as being cured by this method. In 3 of the cases a good result was apparent in from four to seven weeks up to eight months of treatment, with rest in bed and splints. Five cases treated with massage and electricity for over three months showed no sign of improvement. MacKenzie believes that with his method a subsequent mechanical or surgical treatment is unnecessary. Mayer, in introducing this method, suggested its use also in the lower extremity, and the use of a plaster-of-Paris mould instead of splints. The use of plaster mould tends to prevent severe degrees of contracture and the formation of exudates. Mayer reports 2 cases in which he used the new method. One case had paralysis of the arms, legs, and back. Improvement was pronounced in four weeks. In two months the child had entirely recovered except for a slight paralysis of the tibialis anticus. Another case with one leg affected and with paralysis of the quadriceps recovered in four weeks. This method of immobilization with plaster tends to avoid reflex irritation of the spinal cord.